## DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

## LAKE TROPHIC DATA

## MORPHOMETRIC:

Lake: OTTER POND	Lake Area (ha): 74.87
Town: SUNAPEE	Maximum depth (m): 7.6
County: Sullivan	Mean depth (m): 4.0
River Basin: Connecticut	Volume $(m^3)$ : 3000500
Latitude: 43°26'00" N	Relative depth: 0.8
Longitude: 72°03'30" W	Shore configuration: 1.56
Elevation (ft): 1125	Areal water load (m/yr): 30.51
Shore length (m): 4800	Flushing rate $(yr^{-1})$ : 7.60
Watershed area (ha): 4491.2	P retention coeff.: 0.43
<pre>% watershed ponded: 6.6</pre>	Lake type: natural w/dam

BIOLOGICAL:	2 January 1992	10 July 1991
DOM. PHYTOPLANKTON (% TOTAL) #1	ASTERIONELLA 99%	DINOBRYON 70%
#2		COELOSPHAERIUM 10%
#3		ASTERIONELLA 10%
PHYTOPLANKTON ABUNDANCE (cells/mL)		
CHLOROPHYLL-A (µg/L)		4.91
DOM. ZOOPLANKTON (% TOTAL) #1	KERATELLA 56%	NAUPLIUS LARVAE 33%
#2	CODONELLA 21%	KERATELLA 31%
#3		KELLICOTTIA 14%
ROTIFERS/LITER	48	68
MICROCRUSTACEA/LITER	7	39
ZOOPLANKTON ABUNDANCE (#/L)	68	107
VASCULAR PLANT ABUNDANCE		Common
SECCHI DISK TRANSPARENCY (m)		3.2
BOTTOM DISSOLVED OXYGEN (mg/L)	14.5	0.0
BACTERIA (fecal col., #/100 ml) #1		1
#2		< 1
#3		

## SUMMER THERMAL STRATIFICATION:

#### stratified

Depth of thermocline (m): 6.7 Hypolimnion volume (m³): None Anoxic volume (m³): 23000

CHEMICAL:			OTTER PON	ND	
	2 Janua	ary 1992	10 3	July 1991	
DEPTH (m)	2.5	5.0	2.0	5.0	7.0
pH (units)	6.2	6.1	7.0	7.0	6.4
A.N.C. (Alkalinity)	4.6	5.0	4.3	5.3	5.6
NITRATE NITROGEN	< 0.02	0.03	0.78		< 0.05
TOTAL KJELDAHL NITROGEN					
TOTAL PHOSPHORUS	0.003	0.005	0.007	0.007	0.009
CONDUCTIVITY (µmhos/cm)	86.2	89.9	89.8	88.1	90.1
APPARENT COLOR (cpu)	14	18	12	13	17
MAGNESIUM			0.64		
CALCIUM			3.6		3.11,
SODIUM			11.4		
POTASSIUM			0.95		
CHLORIDE	17	17	19		18
SULFATE	6	6	5		5
TN : TP					
CALCITE SATURATION INDEX			3.1		

All results in mg/L unless indicated otherwise

#### TROPHIC CLASSIFICATION: 1991

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	2	3	1	6	Meso.

## **COMMENTS:**

- 1. This pond was previously surveyed and classified in 1979. The pond went from oligotrophic in 1979 to mesotrophic in 1991. The major reasons for the change were a doubling of the chlorophyll (although it's still less than 5 mg/m³) and a decrease in water clarity from about  $16\frac{1}{2}$  feet to  $10\frac{1}{2}$  feet.
- 2. The water quality trends in this pond are being monitored more closely in DES' Volunteer Lake Assessment Program.
- 3. Boat was launched at a beach; not a public access.
- 4. No wholewater plankton results are available.

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#### FIELD DATA SHEET

LAKE: OTTER POND TOWN: SUNAPEE

DATE: 07/10/91 WEATHER: SUNNY W/ HIGH CLOUDS; BREEZY

B.112. 07, 10, 51	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	WENTHER. SORRI WY MIGH CEOODS, ENEREI			
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION		
0.1	21.5	8.4	94 %		
1.0	21.2	8.3	93 %		
2.0	21.2	8.3	93 %		
3.0	21.2	8.3	93 %		
4.0	21.0	8.3	93 %		
5.0	21.0	8.3	93 %		
6.0	20.2	7.5	82 %		
7.0	15.5	0.5	5 %		
7.3	15.0	0.0	0 %		

SECCHI DISK (m): 3.2 COMMENTS:

BOTTOM DEPTH (m): 7.6

TIME: 1215

\*Dissolved oxygen values are in mg/L

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# AQUATIC PLANT SURVEY

LAK	E: OTTER POND	DATE: 07/10/91	
For	PLANT	ADIMDANCE	
Key	GENERIC	СОММОИ	ABUNDANCE
E	Eriocaulon septangulare	Pipewort	Scattered
L	Lobelia dortmanna	Water lobelia	Scattered
W	Potamogeton	Pondweed	Sparse
S	Sparganium	Bur reed	Scattered
P	Pontederia cordata	Pickerelweed	Scattered
В	Brasenia schreberi	Water shield	Common
U	Utricularia	Bladderwort	Common
Y	Nuphar	Yellow water lily	Scattered
Х		Sterile thread-like leaf	Common
N	Nymphaea	White water lily	Scattered
F	Nymphoides cordatum	Floating heart	Sparse
Т	Typha	Cattail	Sparse
M	Myriophyllum	Water milfoil	Sparse

## GENERAL OBSERVATIONS:

 Milfoil fragments were found floating at the southeastern end of the pond. No rooted plants were found. The milfoil was not the nuisance exotic species.

OVERALL ABUNDANCE: Common

2. Wetlands were located along the inlets at the northwestern end.